

REMARKS

The Official Action of July 15, 2008, and the prior art cited and applied therein have been carefully reviewed. The claims in the application are now claims 1 and 3-16, including new claims 13-16, and all of these define patentable subject matter warranting their allowance. The applicant therefore respectfully requests favorable reconsideration and allowance.

The present application claims priority from a German application filed August 20, 2002, and a copy of same will have been forwarded to the PTO from the International Bureau of WIPO. Accordingly, acknowledgement by the PTO of the receipt of applicant's papers filed under Section 119 **would be appreciated.**

Claim 1 has been rejected under Section 102 as anticipated by Tundermann et al USP 3,941,584 (Tundermann), and claims 1, 5 and 6 have been rejected under Section 102 as anticipated by Hashizume USP 4,622,073. These anticipation rejections are respectfully traversed.

Claim 2 has now been incorporated into claim 1. As claim 2 has not been rejected as anticipated by either Tundermann or Hashizume, it is understood that these

rejections are no longer deemed by the PTO to apply against the rejected claims.

Regardless, it is essential to understand that the way in which the copper-based metal flakes of the present invention are made affects the structure and physical nature of the copper-based metal flakes themselves. Stated another way, the claimed product itself is characterized by the differences produced in the product by the way it is manufactured, and this is explained in some detail in the attached declaration under 37 CFR 1.132 in the name of the inventor/applicant, Mr. Herzing.

In contrast to the present lustrous copper-based metal flakes, the metal flakes of Tundermann and Hashizume, produced by milling or grinding of metal powders, have much rougher surfaces than the relatively smooth surfaces of the claimed lustrous copper-based metal flakes of the present invention.

Tundermann discloses a metal flake pigment containing by weight *inter alia* up to 90 % copper, up to 70 % zinc and up to about 70 % tin (Tundermann, column 6, lines 38 to 55). The metal flakes are obtained by milling the stain-resistant metal powder with grinding bodies in the presence of an unsaturated or saturated fatty acid with 4 to 28 carbon atoms as a lubricant (Tundermann, column 3, lines 8 to 37).

The metal flakes contain a major proportion of particles with an average thickness which is less than 1  $\mu\text{m}$  (micron) and an average dimension across the major flake axis of from 10 to 80  $\mu\text{m}$  (Tundermann, column 4, lines 33 to 39). The metal flake powder consists essentially of solid opaque flakes of metal said to have essentially smooth, defect free, mechanically formed faces (Tundermann, claim 1).

Hashizume discloses a metal powder pigment coated with an organic titanate, which contains a copper-alloy (Hashizume, column 5, lines 5 to 19). Furthermore, "leafing" or "non-leafing" aluminum pigments and pigments of other metals such as iron, nickel, tin, chromium, lead, and zinc or various alloys of these metals could be used, the flaky metal powder pigments being said to be commonly made by grinding finely divided metal powder into the desired flake form (Hashizume, column 5, lines 14-15).

Thus, neither Hashizume nor Tundermann disclose a lustrous copper-based metal flake having the physical characteristics provided by vacuum deposition of a metal film onto a carrier sheet, stripping of the film from the carrier sheet, and subsequent comminuting of the film.

While the issue of the claim form has not been raised by the examiner so as to require any rebuttal by applicant at this stage, applicant nevertheless invites the

examiner's attention to *In re Luck et al*, 177 USPQ 523, 525 (CCPA 1973), where the Court stated as follows:

As for the method..., it is well established that product claims may include process steps to wholly or partially define the claimed product. [citation omitted]. To the extent these process limitations distinguish the **product** over the prior art they must be given the same consideration as traditional product characteristics.  
[Emphasis in original]

The way in which the metal flakes of the present invention are made makes those metal flakes fundamentally different from the metal flakes of either Tundermann or Hashizume.

Withdrawal of both rejections under Section 102 is in order and is respectfully requested.

Claims 1 and 4 have been rejected as obvious under Section 103 from Tundermann. The rejection is respectfully traversed.

Claim 2 has not been so rejected, and so it is understood that claims 1 and 4, which now incorporate the subject matter of claim 2, would no longer be deemed by the PTO to be obvious from Tundermann.

In addition, as pointed out above, Tundermann provides a fundamentally different type of metal flake from that claimed, and there is nothing in Tundermann which would have made it obvious to make the modifications necessary to

produce or provide the metal flakes of claims 1 and 4 even as originally drafted.

Withdrawal of the rejection is in order and is respectfully requested.

Claims 1, 5 and 6 have been rejected as obvious under Section 103 from Tundermann in view of Hashizume. This rejection is respectfully traversed.

First, claim 2 has not been so rejected, and it is therefore understood that this rejection would not be considered by the PTO to be applicable against claims 1, 5 and 6 in their present form.

In addition, both Tundermann and Hashizume are fundamentally deficient as pointed out above and in the attached Declaration, with respect to claims 1, 5 and 6 in their original forms.

Withdrawal of the rejection is in order and is respectfully requested.

Claims 1 and 2 have been rejected as obvious under Section 103 from Hashizume. This rejection is respectfully traversed.

As pointed out above, Hashizume is fundamentally deficient because the Hashizume flakey metal powder pigments

are made by grinding, which gives them a substantially different character than the claimed metal flakes. Regardless of the issue of whether or not there are "overlapping" ranges, there is nothing in Hashizume which would have made it obvious to modify Hashizume in any way which could produce or provide the claimed metal flakes.

As pointed out in some detail above, as well as in the attached Declaration, the metal flakes of original claims 1 and 2 (as well as claim 1 as presently amended and all the claims dependent therefrom, including the new claims 13-16) are fundamentally different and contrary to the pigments disclosed by Tundermann and Hashizume which are produced by milling or grinding of metal powders of a defined metal content. The initial metal powders of the applied prior art are produced for example by atomization or comminuting (Tundermann, column 6, lines 67 and 68).

During the milling process, the individual powder particles are then flattened between impacting grinding balls or between the balls and the walls of the container holding them (Tundermann, column 4, lines 6 to 10). As a result of this process, the metal flakes have mechanically formed faces (Tundermann, claim 1) which can be differentiated on scanning electron microscope images from the mirror-smooth undisturbed

surfaces of the pigments of the present invention (Present application, page 7, lines 18 and 19).

In order to clearly demonstrate the difference between these two different kinds of pigments, please again consider the attached declaration including scanning electron microscope (SEM) images as data files of a commercially available gold bronze pigment obtained by a milling-process and the pigments of the present invention which are obtained by vacuum deposition.

As seen on the SEM-images, the pigments obtained by vacuum deposition exhibit plane, mirror-like faces with uniform thickness and even breaking-edges, whereas the pigments obtained by milling are characterized by their fringed breaking-edges and mechanically formed faces showing vestiges of mechanical deformation and varying layer thicknesses.

Phrased differently, there are significant structural differences between the pigments of the present invention, obtained by vacuum deposition, and the pigments from the cited state of art, which were obtained by milling or grinding (Tundermann, column 3, lines 8 to 37; Hashizume, column 5, lines 12 to 19). Effect pigments obtained by a PVD-process have improved optical properties compared to effect pigments obtained by ball milling.



Again, there is nothing Hashizume (or in Tundermann for that matter) which would have made it obvious to modify what is there disclosed in order to reach the claimed subject matter.

Withdrawal of the obviousness rejection is in order and is respectfully requested.

Claims 1 and 3 have been rejected under Section 103 as obvious from Hashizume in view of Ida USP 3,020,154 (Ida). This rejection is respectfully traversed.

Again, as claim 2 was not so rejected, applicant understands that this rejection would no longer be deemed by the PTO to apply to claims 1 and 3 in view of the amendment made above to incorporate claim 2 into claim 1, effectively making claim 1 correspond to claim 2 rewritten in independent form.

Nevertheless, applicant does not see the relevance and thus the materiality of Ida which relates to an aluminum alloy especially suited for use in pressurized-water power reactors. Applicant has never alleged that the alloy used in the claimed flakes constitutes a novel alloy, but on the other hand applicant is not willing to accept or agree with the PTO contention that such an alloy is disclosed by Ida. In any event, applicant believes and respectfully submits that it



would not have been obvious to use the alloy of Ida or a similar alloy in the flakes of Hashizume, or that such a substitution, even if it were obvious, would correspond to the claimed subject matter.

Withdrawal of the rejection is in order and is respectfully requested.

Claims 1-6 have been provisionally rejected on the basis of obviousness-type double patenting. This rejection is respectfully traversed.

The pigments disclosed and more importantly claimed in the co-pending U.S. application 10/525,392 contain a copper-zinc alloy rather than a copper-aluminum alloy. There is nothing in the claims of co-pending application 10/525,392 which would have made it obvious to substitute a copper-aluminum alloy for the claimed copper-zinc alloy, let alone in the proportions now required in all the claims, and previously set forth in claim 2. The claimed subject matter would not have been obvious from the claims of 10/525,392.

Withdrawal of the rejection is in order and is respectfully requested.

The prior art documents of record and not relied upon by the PTO have been noted, along with the implication

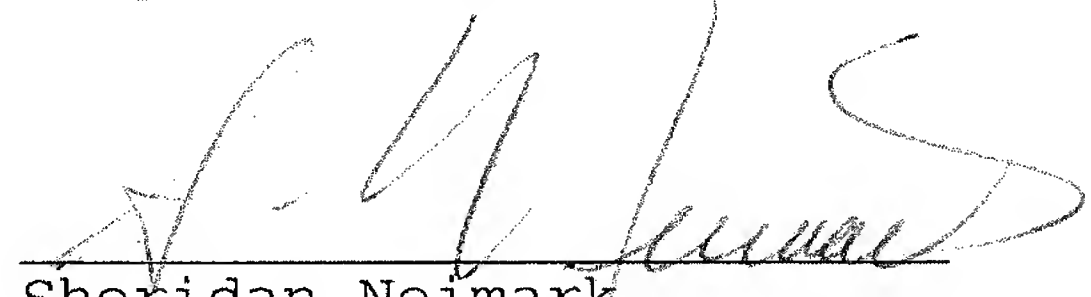
that such documents are deemed by the PTO to be insufficiently material to warrant their application against any of applicant's claims.

Applicant believes that all issues raised in the Official Action have been addressed above in a manner that should lead to patentability of the present application. Favorable consideration and early formal allowance are respectfully requested.

Respectfully submitted,

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